

## Cross Connection Control / Backflow Prevention

More information is available at:

[www.leg.wa.gov/wac/index.cfm?section=246-290-490&fuseaction=section](http://www.leg.wa.gov/wac/index.cfm?section=246-290-490&fuseaction=section)

Seattle Public Utilities (SPU) and King County Health Department (KCHD) are the administrative authorities engaged in a joint program identifying actual and potential cross-connections between the public water supply and possible sources of contamination. The control of cross-connections is accomplished in two basic methods.

1. Premises isolation: SPU is responsible for protection of the public water system. This is done by requiring backflow protection at the service connection when required.
2. In-Premises: KCHD is responsible for all backflow protection requirements within the premises.

The Rules and Regulations of the Washington State Department of Health (WSDOH) require that certain premises install backflow prevention assemblies at the water supply connection as a condition of water service (WAC 246-290-490, Table 9). Backflow prevention assemblies shall be installed within any premises where in the judgment of SPU and/or KCHD the nature of the activities on the premises or the materials stored on the premises present a hazard should a backflow incident occur.

### Beverage Bottling Plants

SPU requires proper installation of a WSDOH approved Reduced Pressure Backflow Assembly (RPBA) on the water supply connection (WAC 246-290-490, Table 9 requirement). Other water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### Hazard/Use:

Wash down areas, boiler  
Assembly (RPBA) or Air Gap  
make-up water, chemical aspirator.

#### Type of Protection:

Reduced Pressure Backflow

### Boilers

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### Hazard/Use:

Boiler's with chemical addition,  
make-up water, supplying heating  
systems, supplying non-potable  
systems, not dual-walled leak protected.

#### Type of Protection:

Reduced Pressure Backflow  
Assembly (RPBA) or Air Gap

### Chemical Addition Systems

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### Hazard/Use:

Chemical proportioner, aspirator,  
or other chemical addition systems.

#### Type of Protection:

Reduced Pressure Backflow  
Assembly (RPBA) or Air Gap

### Commercial Laundries & Dry Cleaners

SPU requires proper installation of a WSDOH approved Reduced Pressure Backflow Assembly (RPBA) on the water supply connection (WAC 246-290-490, Table 9 requirement). Other water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### **Hazard/Use:**

Make-up water for boilers, heat pumps, cooling towers, steam facilities, water lines to laundry machines, vats, mixing tanks with below rim inlets, drain lines to waste.

#### **Type of Protection:**

Reduced Pressure Backflow Assembly (RPBA) or Air Gap

### Fire Sprinkler Systems

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### **Hazard/Use:**

- Systems which contain chemicals, systems with auxiliary supply or storage tanks.
- Systems where pipe materials are not approved for potable water usage, systems which exceed 3 stories or 30 feet above meter grade, systems that includes a booster pump.

#### **Type of Protection:**

Reduced Pressure Backflow Assembly (RPBA) or Air Gap

Double Check Valve Assembly (DCVA)

**NOTE: All piping material prior to the RPBA or DCVA must be approved for potable water usage.**

### Food Service and Processing Equipment

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### **Hazard/Use:**

- Dishwasher, ice maker with reservoir or float system, drain line to waste.
- Ice maker with water-cooled condenser, chemical addition system, carbonated
- beverage dispenser, fume hood, refrigeration unit, steam connected facility (autoclaves, retorts, etc). Any equipment used for storing, washing, cleaning or transmission of food. Boiler, heat pump, and cooling tower make up water, water cooled equipment, auxiliary water supply.
- Steamer

#### **Type of Protection:**

Air Gap

Reduced Pressure Backflow Assembly (RPBA) or Air Gap

Double Check Valve Assembly (DCVA)

## Hospitals, Medical Centers, Nursing Homes, Blood Plasma Centers and Veterinary / Medical / Dental Clinics

SPU requires proper installation of a WSDOH approved Reduced Pressure Backflow Assembly (RPBA) on the water supply connection (WAC 246-290-490, Table 9 requirement). Other water uses that may require installation of WSDOH approved backflow prevention assemblies are:

### Hazard/Use:

- Chemical addition systems, dental cuspidors, syringes, waste pretreatment systems.
- Air compressors, autoclaves, boiler cooling & HVAC systems, film processing equipment, laboratories, wet vacuum systems, X-ray equipment.
- Dental chairs

### Type of Protection:

Reduced Pressure Backflow Assembly (RPBA) or Air Gap

RPBA

Double Check Valve Assembly

## Irrigation Systems

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

- **Atmospheric Vacuum Breaker (AVB)** may be used on a single zone irrigation system, must be installed 6 inches above highest fixture, no shutoff valves allowed downstream, must run less than 12 hours in a 24 hour period.
- **Pressure Vacuum Breaker Assembly (PVBA)** may be used on a multi zone irrigation system, must be installed 12 inches above highest fixture, shutoff valves are allowed downstream.
- **Double Check Valve Assembly (DCVA)** may be used on multi zone irrigation system; it protects against backpressure and backsiphonage, required on all pumped or elevated piping systems, which may cause backpressure. May be installed in irrigation box.
- **Reduced Pressure Backflow Assembly (RPBA)** required on all systems when fertilizers, herbicides, or other materials are injected into the irrigation system. Assembly must be installed a minimum of 12 inches above ground.

## Laboratories

SPU requires proper installation of a WSDOH approved Reduced Pressure Backflow Assembly (RPBA) on the water supply connection (WAC 246-290-490, Table 9 requirement). Other water uses that may require installation of WSDOH approved backflow prevention assemblies are:

### Hazard/Use:

Make-up water for boiler, heat pump,

### Type of Protection:

Reduced Pressure Backflow

cooling tower, steam facility, chemical addition system, photo processor, eyewash, emergency shower equipped with flexible hose.

Assembly (RPBA) or Air Gap

### **Light & Heavy Manufacturing**

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### **Hazard/Use:**

- Drain line to waste.
- Steam generating facilities and lines, plating plant facilities, plating solution filtering equipment, hydraulically operated equipment, chemical addition system. Boiler, heat pump, and cooling tower make up water, water-cooled equipment, auxiliary water supply.

#### **Type of Protection:**

Air Gap  
Reduced Pressure Backflow

### **Photo Processing**

Water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### **Hazard/Use:**

- Drain line to waste.
- Automatic film processing machines, chemical mix tanks, processing water supplies. Make up water to boiler, heat pump, cooling tower. Water-cooled equipment, auxiliary water supply.

#### **Type of Protection:**

Air Gap  
Reduced Pressure Backflow

### **Piers and Docks**

Seattle Public Utilities requires proper installation of a WSDOH approved Reduced Pressure Backflow Assembly (RPBA) on the water supply connection (WAC 246-290-490, Table 9 requirement). Other water uses that may require installation of WSDOH approved backflow prevention assemblies are:

#### **Hazard/Use:**

- All pier outlets and water service lines to houseboats.
- All hose faucets.

#### **Type of Protection:**

Double Check Valve Assembly (DCVA)  
Atmospheric Vacuum Breaker

All backflow assemblies used must be on the most current WSDOH approved list. Proper installation procedures and clearances required are available through the appropriate administrative authority. SPU will inspect premises isolation assemblies to ensure the assembly is installed properly and is the correct assembly for degree of hazard. KCHD will inspect in-premises isolation

assemblies to ensure the assembly is installed properly and is the correct assembly for degree of hazard. To schedule an inspection of your system after assemblies have been installed and tested, or if you have questions concerning backflow prevention, please call the appropriate administrative authority: for SPU please call (206) 684-3536 and for KCHD, please call (206) 233-5135.

***(NOTE: All backflow assemblies are required to be tested annually.)***